Gesture controlled vehicle

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Planned Features

- Gesture based control interface with hands.
- Engage/dis-engage and start/stop features.
- Speed control for movement.

Implemented features

- Remote control interface instead of wearable interface.
- Push buttons and indicators with LED’s for Engage and Start functions.
- Speed Control

Hardware Used

- Arduino Uno microcontroller boards
- Xbee Communication Chips
- 20A dual DC motor driver
- MPU-6050 6-axis gyroscope and accelerometer
- LEDs, Pushbuttons and packaging material.
- RC car

Cost Involved

Item	Cost
Arduino Uno (2)	$40
Xbee S2 (2) and Shields	$50
20A Dual Dc Motor Driver	$12
MPU6050	$11
Packaging and Misc.	$25
TOTAL	$138

Changes

- Previous idea for deriving gestures is not so user friendly.
- Remote control is much better than a wearable interface in some cases.
- Easier to learn and exercise.

Working

- Multi-loop algorithm
- Threshold Division

```
x = accel_t_gyro.value.y_accel;
 x = map(x, -8000, 13000, 200, 0);
 x = constrain (x,0,200);
 val  = accel_t_gyro.value.z_accel;
 val = map(val, -15000, 15000, 0, 180);
 val = constrain (val,0,180);
 encodedValue = val*100000 + x ;

 Serial.println(encodedValue);

 while(start == 0)
 {
 Serial.println(disEngage);
delay(100);
 if(digitalRead(6) == 1)
 {
  while(digitalRead(6) == 1)
  {
  }
  start = 1;
  digitalWrite(8,HIGH);
 }
 }
 if(digitalRead(6) == 1)
 {
  while(digitalRead(6) == 1)
  {
  }
  start = 0;
  digitalWrite(8,LOW);
 }
```

```
while(engage == 1)
 {
 Serial.println(encodedValue);
delay(100);
 if(digitalRead(7) == 1)
 {
  while(digitalRead(7) == 1)
  {
  }
  engage = 0;
  digitalWrite(9,LOW);
}
}
 if(digitalRead(7) == 1)
{
  while(digitalRead(7) == 1)
  {
  }
  engage = 1;
  digitalWrite(9,HIGH);
}
```

questions!

Thank You